Deltares USA

Enabling Delta Life

FEWS 2014.02 Release

Install notes for the National Weather Service

April 2015

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Prepared for:

National Weather Service

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Report

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Client	National Weather Service
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Abstract

Install instructions for upgrading the NWS implementation of FEWS, from release 2014.01 to 2014.02.

References	

	Author		Date	Remarks	Review		Approved by	
	Lemans		Feb 4 ‘15	Beta release 1402			Welles	
	Lemans		Feb 26 ‘15	Beta release 1402			Welles	
	Lemans		Apr 24 ‘15	Release NWS1402			Welles	

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Contents

1 Introduction

This FEWS release contains of:

- a FEWS stable NWS2014.02 build
- **install notes**
- release notes general
- release notes CHPS
- configuration update document

This document describes the procedure to update the existing client-server and stand-alone systems from the NWS2014.01 FEWS release to the NWS2014.02 FEWS release at all RFCs. Note: This procedure cannot be used to set up an initial client-server system.

This procedure assumes a dual-mastercontroller system update. Indicating which update activities can be skipped in case a single master controller update is conducted. It is necessary that all master controllers should be stopped and MC-MC synch tasks suspended during the update process of such a system, as instructed in Section 3.

Please verify that the procedures described in each section have been completed successfully before proceeding to the next section. Instructions for verification will be provided.

Any commands to be typed in will be displayed a courier-style typeface:

```
$ ls -l /awips/chps_share/fews
```

Note that any command which changes the user id should be "`su -`", i.e. to include the minus sign, to force the reading of any environment variables for that particular user.

This release uses MC build 52889 with Delft-FEWS binaries build 50595 and patch 53736.

IMPORTANT REMARKS: Configuration Updates

The updates and changes in configuration are documented in the configuration update document. As with all other configuration changes, the changes should be tested in an SA first before uploading to a live system.

2 Installation Procedure - Manual

2.1 Introduction

The installation procedure covers the following steps:

- Installation steps for individual system components
- Detailed instructions
- Reference to required files

2.2 General System Components Overview

This is an overview of the components to be upgraded. Detailed steps begin in Chapter 3.

Seq #	Component	Main activity	Required files (on the ftp)
Central / Server Components			
1	Central Database	Database update scripts 2014.01 to 2014.02	database_update_scripts/update_2014.02/*
2	MasterController	Deploy MC	mc/fews-MC-stable-201402.jboss.52889.zip (Where 50595 is the mc release build number)
3	MasterController	Update configuration	
4	Admin Interfaces	Deploy AI	mc/fews-MC-stable-201402.jboss.52889.zip /admin_interface/fewsadmin.war
	JAVA Build	Deploy new java version	java/jre1.7.0_71.tar.gz
Forecasting Shell Server Components			
1	Delft-FEWS binaries	Deploy/replace	delft_fews_binaries/bin/
2	synchChannels synchProfiles	Deploy/replace	synchronisation/
3	201402_patch.jar	Deploy	delft_fews_binaries /patch_placeholder/
4	mcproxy jar files	Deploy/replace	fss/mcproxy
System and Configuration Management			
1	Scheduled tasks	Reschedule MC tasks	
2	Schemas	Deploy/replace	delft_fews_binaries/bin/Delft_FEWS_schemas.jar
Operator Clients			
1	Delft-FEWS binaries	Deploy/replace	delft_fews_binaries/bin/
2	synchChannels synchProfiles	Deploy/replace	synchronisation/
3	201402_patch.jar	Deploy/replace	delft_fews_binaries/patch_placeholder/
Stand Alone			
1	Delft-FEWS binaries	Deploy/replace	delft_fews_binaries/bin

3 Stepwise Update Sequence

This section describes the steps in order to upgrade to the new version. They are listed in the next two tables and explained in the sections in the remainder of this document.

3.1 Single MC Upgrade Sequence

Seq#	Description	Purpose
0	Transfer distribution from FTP	Get a local copy from the installation package from the FTP Site. Instruction provided in email.
1	Upgrade of the Stand Alone for testing and then test with SA	Update snow analyses config if needed
2	Shut down main components	Stopping the main services running on the backend servers: • MasterController • FSS mcproxies
3	Java update	update the java/jre version to 1.7.0_71
4	Update of the Mastercontroller	Update the MC to the latest version
5	Update of the database	Running the database update scripts in order to get the latest tables, indexes and constraints Because this is a two build upgrade you need to run two scripts
6	Update of the Admin Interface	Update the Admin Interface to the latest version
7	Start up main components	Starting the main services running on the backend servers: • MasterController
8	Update the Forecasting Shell Server components	Update the Forecasting Shell Server components (mcproxy, delft-fews binaries)
9	Start the Forecasting Shell Machines	Start the FSSs (mcproxies) in order to let the localDataStores be rebuilt and to get the latest config and data.
10	Update an Operator Client for testing purposes	Update a test OC to the latest version Open the application to test and work with the system running the latest version of Delft-FEWS and getting the latest config and data.
11	Open the Config Manager and upload configuration	Open the CM to upload the snow analyses config update if needed
12	Roll out update to all Operator Client	Update all OCs to the latest version
13	Schemas update	Update Schemas, extract from jar file
14	Update/verify live system configuration	Certain new features with configuration updates: see: Config_Update_Document_CHPS_Stable201402.pdf

3.2 Multi MC Upgrade Sequence

The references in the installation instructions are described for the MC00 system (chps1, 2 and 3).

FOR THE ALPHA and BETA BUILDS, ALL INSTALLS FOR THE LIVE SYSTEMS MUST BE DONE ON 789.
For the upgrade of MC01 this should be read as chps 4, 5 and 6.
It is recommended to print the next table and use it as a checklist.

Seq#	Description	Ref	Purpose	Check done
0	Transfer distribution from FTP		Get a local copy from the ftp Site. Instructions provided in email.	
1	Upgrade of the Stand Alone for testing			
Upgrade chps 1, 2 and 3 (MC00 system)				
2	Preparation of Central System for updating MC00		Stopping the main components chps 1, 2 and 3 • Stop MC00 • Stop **all** MC-MC Synchronisation tasks for **all** MCs	
3	Java update to jre1.7.0_71		update the java/jre version to 1.7.0_71	
4	Update of the Mastercontroller		Update the MC00 to the latest version	
5	Update of the Database		Running the database update scripts in order to get the latest tables, indexes and constraints	
6	Update of the Admin Interface		Update the Admin Interface to the latest version	
7	Update the Forecasting Shell Server components		Update the Forecasting Shell Server components (mcproxy, delft-fews binaries)	
8	Start Mastercontroller		Start the MC running the latest version	
9	Start the Forecasting Shell Machines		Start the FSSs (mcproxies) in order to let the localDataStores being rebuild and getting the latest config and data.	
10	Update an Operator Client for testing purposes.		Update a test OC to the latest version Open the application to test and work with the system running the latest version of Delft-FEWS and getting the latest config and data.	
11	Roll out update to all Operator Client		Update the OC to the latest version	
Upgrade chps 4, 5 and 6 (MC01system)				
12	Preparation of Central System for updating MC01		Stopping the main services chps 4, 5 and 6 • Stop MC01 • Stop **all** MC-MC Synchronisation tasks for **all** MCs	
13	Java update		update the java/jre version to 1.7.0_71	
14	Update of the Mastercontroller		Update the MC01 to the latest	

			version	
15	Update of the database		Running the database update scripts in order to get the latest tables, indexes and constraints	
16	Update of the Admin Interface		Update the Admin Interface to the latest version	
17	Update the Forecasting Shell Server components		Update the Forecasting Shell Server components (mcproxy, delft-fews binaries)	
18	Start Mastercontroller		Start the MC01 running the latest version	
19	Start MC-MC Synchronisation on MC00		Synching forecast/import data to db00	
20	Start MC-MC Synchronisation on MC01		Synching forecast/import data to db01	
21	Start the Forecasting Shell Machines		Start the FSSs (mcproxies) in order to let the localDataStores being rebuild and getting the latest config and data.	
End of MC01 update				
22	Update/verify live system configuration		Confirm that various communication settings are properly specified	
23	Open the Config Manager and upload live system configuration		Open the CM to upload the latest configuration to the central system	
24	Schemas update		Update Schemas, extract from jar	

3.3 Transfer distribution from FTP

The complete FEWS installation can be found in **NWS201402_MC52889_OC53736.tgz** .
In this section, the contents of this directory will be copied to the /chps_share directory, and from there parts will be copied to other locations.

1. Log on to chps1 as user fews
2. `$ cd /awips/chps_share/install/Oct2015/CHPS-5.2.1/`
3. Untar the package (which was included in the CHPS-5.1.1 tar file 'pushed' by AWIPS):
4. `$ tar -xzvf` **`NWS201402_MC52889_OC53736.tgz`**
5. `cd NWS201402`
6. To fix executable flags execute the following commands
7. `$ chmod +x delft_fews_binaries/bin/*.sh`
8. Verify the results by checking permissions:
9. `$ ls -l delft_fews_binaries/bin/*.sh`
10. copy the fews.sh script in the current build to the new build, to make sure you don't lose the changes you have made to the –Xmx memory and firebird.conf settings
11. `$ cp /awips/chps_share/fews/bin/fews.sh delft_fews_binaries/bin`
12. Run the clean up script to remove unnecessary *jars and Windows libraries:

```
$ cd delft_fews_binaries/bin/
$ ./cleanup_bin.sh
```

Choose option 4 ("JBoss 4 and Linux")

3.4 Update of the Stand Alone application for testing purposes

Please Note: This is a generic procedure to update a Stand Alone version with the latest Delft-FEWS binaries. Exact paths will depend on the individual installations, only relative paths are given here.
The Stand Alone version is the only version where new binaries may be installed by an ordinary user and not the super user.

Create a test application with the new binaries

1. From the LX machine: `cd /awips/chps_share/sa/fews`
2. `$ mv bin bin.201401` (if any)
3. `$ cp –dR /awips/chps_share/install/NWS201402/delft_fews_binaries/bin .`
4. `$ cd bin`
5. copy the fews.sh script in the current sa build to the new build, to make sure you don't lose the changes you have made to the –Xmx memory settings
6. `$ cp ../bin.2014.01/fews.sh .`
7. If not available in directory `fews`, copy a functioning `??rfc_sa` application into this directory
8. If not available in directory `fews`, create a symbolic link to the `jre` as follows (the jre will be updated in 3.6, for sa testing you can continue for now):
   `$ ln –s /awips/chps_share/java jre`
9. `$ cd ??rfc_sa`
10. `$ rm *patch.jar`
11. `$ cp –dR /awips/chps_share/install/NWS201402/delft_fews_binaries/patch_placeholder/201402_patch.jar .`
12. `$ rm –r export_config (if any)`

Open the Stand alone application
Open the Stand Alone application and verify the following:

1. Use the menu "Help" => "About" and confirm that the build number is 53736 (or higher). This proves the correct build is used.
2. Test functionality as you see fit. Run segments etc.

3.5 Preparation of the central system for update

Follow the order of activities as described in section 3.1 or section 3.2. Below you find the instructions how to carry out these activities

Stop MC-MC synchronisation (multiple MC systems only)
Check the Admin Interface to see if no tasks are running on the FSSs for this MC. If not, navigate to: *Forecast Tasks >> Scheduled Tasks* and locate the MC-MC synchronisation task(s). Click on the *Suspend* link in the right column for all available MC-MC Synchronisation tasks.

Stopping the Mastercontroller
Check the Admin Interface if a task is running at the FSS. If no task is running, the following steps can be taken:

1. Log on to `chps3` as user `fews`
2. `$ cd /awips/chps_local/fss/??rfc/FSS00/mcproxy`
   (?? should be replaced with the 2 letter RFC acronym, e.g. ne)
3. `$./mcproxy.sh stop`
4. Repeat step 2 and 3 for each FSS instance (FSS01 etc.)
5. Verify that mcproxy processes are no longer running with a `ps –ef |grep java|grep –i MCListener`. You should see no processes running.
6. In case of a PI service: Stop PI service, remove the log files, patch file and local data and update the new patch file, similar to the instructions for updating the FewsShell in Step 3.10 (no further PI service instructions in this section)
7. Log on to `chps1` as user `fews`
8. `$ cd /awips/chps_local/mc/mcs/###mc00` (### should be replaced with the 3 letter RFC acronym, e.g. `tar`)
9. `mcstop`

   If `mcstop` complains about an incorrect mcId, you may need to check the FEWS_MC_HOME variable (`echo $FEWS_MC_HOME`) and export the correct variable.
10. The script should report that the mastercontroller components are being stopped.
11. Verify that mastercontroller processes are no longer running, either through the admin interface or with:
12. `$ ps –ef |grep java|grep mc00` (this should return no running processes, this should be replaced by `mc01` in case of stopping MC01).

3.6 Update of Java Runtime to 1.7.0_71

The instructions below assume the current java version (like 1.7_11) has to be replaced.

1. Log on to chps3 as user fews
2. `$ cd /awips/chps_share/`
3. Use `java –version` command to check the java version. If that is 1.7.0_71 already, move to step 8.
4. `$ mv java java_1.7_11`
5. `$ tar -xzf /awips/chps_share/install/NWS201402/java/jre-7u71-linux-i586.tar.gz`
6. `$ mv jre1.7.0_71 java`
7. `$ rm –rf java_1.7_11`
8. `$ cd /awips/chps_local`
9. Repeat step `3-6`
10. Log on to `chps1` as user `root`
11. `service tomcat stop`
12. `$ ps –ef|grep tomcat` to verify that tomcat is not running any more
13. `$ su - fews`
14. `$ stopjboss`
15. `$ ps –ef|grep jboss` to verify that jboss is not running any more
16. `$ cd /awips/chps_local/`
17. `$ mv java java_1.7_11`
18. `$ tar -xzf /awips/chps_share/install/NWS201402/java/jre-7u71-linux-i586.tar.gz`
19. `$ mv jre1.7.0_71 java`

20. $ startjboss
21. $ ps –ef|grep jboss to verify that jboss is started
22. $ rm jre1.7.0_11
23. $ rm –rf java_1.7_11
24. $ exit (you should be root again now)
25. $ service tomcat start
26. $ ps –ef|grep tomcat to verify that tomcat is started
27. $ exit (you should be fews on chps3 again)

3.7 Update of the MasterController

1. Log on to chps1 as user fews
2. $ ls /awips/chps_share/install/NWS201402/mc/
3. Make a note of the five-digit version number in the name of the file
   fews-MC-stable-201402.jboss.XXXXX.zip
4. $ cd /awips/chps_local/mc/builds/
5. In the commands below, replace XXXXX with the number noted in step 3 (e.g. 52889)
6. mkdir mc.2014.02.XXXXX
7. $ cd mc.2014.02.XXXXX
8. $ cp /awips/chps_share/install/NWS201402/mc/fews-MC-stable-201402.jboss.XXXXX.zip .
9. $ unzip *.zip
10. $ chmod +x scripts/*.sh
11. $ cd /awips/chps_local/mc/mcs/###mc00
    (### should be replaced with the 3 letter RFC acronym, e.g. tar)
12. $ rm build (to remove the symbolic link)
13. $ rm Log4jConfig*
14. In the command below, replace XXXXX with the number noted in step 3
15. $ ln –s ../../builds/mc.2014.02.XXXXX build

3.8 Update of the Central Database

This procedure will create and update database objects in the central FEWS database. In the steps below, please replace *<dbname>* with the database instance name of the particular RFC (without the angle brackets), e.g. tardb00.

1. Log on to chps2 as user root
2. $ cd /var/lib/pgsql/fews
3. $ mkdir -p FEB2015
4. $ cd FEB2015
5. $ scp –r root@chps1:/awips/chps_share/install/NWS201402/database_update_scripts .
6. $ chmod –R +x *
7. $ su – postgres
8. $ cd /var/lib/pgsql/fews/FEB2015/database_update_scripts/update_2014.02
9. $ ./data_update.sh *<dbname>* fews00 (or fews01 in case of MC01 update)
   Note: you may use psql –l to find the <dbname>. Typically this is tardb00 for

Taunton. This script should produce no errors, except for the one below which you can ignore: *psql:data_update.sql:54: ERROR: table "databasecreatetime" does not exist*

10. To verify success, run the following query in DbVisualizer on (`/awips/chps_share/DbVisualizer/dbvis`) or start psql on this server:
    `$ psql –d <dbname> fews00`
    `$ select * from versionmanagement;`
11. This result should contain (next to other entries) the entries similar to:

```
componentid    |          versionid          |      entrydate
---------------------+-----------------------------------+-----------------------
DATABASE_SCHEMA | v2014.02_2014<mmdd>_0| <a very recent timestamp>
```

12. exit pqsl (by typing `\q`)
13. `exit` the session to chps2

3.9 Update of the Administration Interface

In the commands below, replace XXXXX with the number noted in step 3 of section 3.8.

1. Log on to `chps1` as user `root`
2. `$ service tomcat stop`
   Note, you may need to check `/etc/init.d/tomcat` to ensure the correct setting of `JAVA_HOME=/awips/chps_local/java`
3. `$ su - fews`
4. `$ cd /awips/chps_local/tomcat/fews`
5. `$ cp /awips/chps_local/mc/builds/mc.2014.02.XXXXX/admin_interface/fewsadmin.war .`
6. `$ ls /awips/chps_local/tomcat/conf/Catalina/localhost/`
   and verify the `fewsadmin*.xml` file is still present. This file can also be named *`<dbname>.xml`*. If it is not in this directory, it can be found in the `/awips/chps_local/tomcat/fews` directory.
7. `$ touch /awips/chps_local/tomcat/conf/Catalina/localhost/fewsadmin*.xml`
   (to make sure tomcat redeploys the admin interface)
8. `$ cd /awips/chps_local/tomcat/webapps`
9. `$ rm –rf fewsadmin_###mc00`
   This will remove the old Admin Interface and ensures a proper refresh of the application
10. `$ exit` (you should be root again now)
11. `$ service tomcat start`
12. To verify this step, start a browser on your local machine and navigate to `http://chps1-###:8080/fewsadmin_###mc00`
    (### should be replaced with the 3 letter RFC acronym, e.g. `tar`)
13. You should be presented with a log on screen. Log in (use your own or the default username and password: admin/pass)
14. At the bottom of the system status screen, hover over the copyright symbol with you mouse cursor. A tooltip should appear with the version number of the new Mastercontroller release. (Note that the status should all be “unknown”, except for JMS and Database, because the Mastercontroller has not been started yet. Ignore the MC Version field which is not updated yet).
15. Keep the browser open to check the results of the actions in next section(s).

3.10 Update the Forecasting Shell Server Components

Check before update:
Before updating the mcproxies, verify the mcproxy processes are still down:

1. Log on to `chps3` as user `fews`
2. Verify that mcproxy processes are no longer running with
   `$ ps –ef |grep java|grep –i MCListener`
   (this should return no processes. If it still does, please redo the actions specified in 3.5 concerning the mcproxies)

Update mcproxy
In this section the mcproxy jars and configuration will be updated.

1. Log on to `chps3` as user `fews`
2. `$ cd /awips/chps_local/fss/??rfc/FSS00/mcproxy`
   (?? should be replaced with the 2 letter RFC acronym, e.g. ne)
3. `$ rm *.jar`
4. `$ scp chps1:/awips/chps_local/mc/builds/mc.2014.02.xxxxx/mcproxy/* .`
5. `$ rm Log4jConfig*`
6. Repeat steps 2 – 10 for each other FSS instance (FSS01, etc)

Update FewsShell

1. Log on to `chps3` as user `fews`
2. `$ cd /awips/chps_local/`
3. `$ cd fews`
4. `$ mv bin bin_1401`
5. `$ cp –dR /awips/chps_share/install/NWS201402/delft_fews_binaries/bin .`

Note: please do not install the current binaries under bin_buildNum with a symlink from `bin-->bin_buildNum`. This will not work.

6. `$ cd /awips/chps_local/fss/??rfc/FSS00/FewsShell/??rfc`
   (?? should be replaced with the 2 letter RFC acronym, e.g. `ne`)
7. `$ rm Log4jConfig*`
8. `$ rm –r localDataStore`
9. `$ rm *patch.jar`
10. `$ cp /awips/chps_share/install/NWS201402/delft_fews_binaries/patch_placeholder/201402_patch.jar .`
    (the file 201402_patch.jar should have a size of ~5.5 MB)
11. Repeat steps 6 – 12 for each FSS instance (FSS01 etc.)

3.11 Start MasterController

Now that the software has been updated the mastercontroller can be restarted.

This will be MC03 for testing.

1. Log on to `chps1` as user `fews`

2. `$ cd /awips/chps_local/mc/mcs/###mc00`
   (### should be replaced with the 3 letter RFC acronym, e.g. tar
3. `$ mcstart`
   If `mcstart` complains about an incorrect mcId, you may need to check the FEWS_MC_HOME variable (`echo $FEWS_MC_HOME`) and export the correct variable.
4. In the directory, `*.up` files should start to appear with a recent timestamp (verify with `ls –ltr`).
5. In the admin interface, the status of the mastercontroller components should change from unknown to 'down' and after some time to 'OK' (the FSSs' status will remain down, until the mcproxies have been restarted as part of the procedure in one of the next sections). The MC Version field in the system status page should display the current version.

3.12 Start FSSs

1. Log on to `chps3` as user `fews`
2. `$ cd /awips/chps_local/fss/??rfc/FSS00/mcproxy`
3. `$./mcproxy.sh start`
4. Repeat step 2 and 3 for each FSS instance (FSS01 etc.) HSD suggests that RFCs wait until each FSS localdatastore completely rebuilds before starting to rebuild the next one. Some offices with large local data stores will have synch trouble otherwise.

After the FSS instances are restarted, it is wise to execute a task for each FSS instance via the Admin Interface to rebuild the local data stores. To do so, conduct the following steps:

5. Start a browser on your local machine and navigate to:
   `http://chps1-###:8080/fewsadmin_###mc00`
   (### should be replaced with the 3 letter RFC acronym, e.g. `tar)`
6. Login as `admin`
7. Navigate to `Forecast tasks >> Scheduled tasks – one off task`
8. Select the `(FSS) Rollingbarrel` workflow and submit with a start time 2 minutes from now
   Confirm that FSS00 executes this task. It should rebuild the localDatastore for FSS00
9. Select the `ImportRatings` workflow and submit with a start time 2 minutes from now
   Confirm that FSS01 executes this task. It should rebuild the localDatastore for FSS01
10. Rebuild localDataStore for all FSS using a similar procedure.

3.13 Start Synchronisation FROM running MC to upgraded MC (multiple MC systems only)

Now that the mastercontrollers run, the MC-MC synchronisation process from the running MC to the updated MC should be resumed such that the 2014.02 database is updated with the latest states and modifiers.

DO NOT resume the synchronisation from the updated MC to the running MC.

Start MC-MC synchronisation on (**MC03 for testing**) MC00 (multiple MC systems only)

1. Start a browser on your local machine and navigate to:
   `http://chps1-###:8080/fewsadmin_###mc00`
   (### should be replaced with the 3 letter RFC acronym, e.g. `tar`)
2. Login as `admin`
3. Navigate to `Forecast tasks >> Scheduled tasks`
4. `Resume` task MC-MC synchronisation

Confirm completion of MC-MC synchronisation

Continue with the next step once the MC-synchronisation is completed.
The completion of the task can be confirmed as follows:

5. Navigate to `Forecast tasks >> Running tasks`
   Once the task is MC-MC synchronisation task is removed from this list it should show successful in the task runs overview:
6. Navigate to `Forecast tasks >> Scheduled tasks`
7. For task MC-MC synchronisation, select link ‘task runs’ in the last column of the table.

Please note that config changes on the updated test MC will be overwritten by existing configuration from the chps456, including synchProfiles and synchChannels in section 3.14. Please switch off the MC-MC synchronisation task again when the first synchronization is completed during testing.

3.14 Update the Operator Client for testing purposes

Update binaries

1. On an LX workstation:
   `$ cd /awips/chps_share/oc/`
2. Change directory to user directory `for the testing user, for example, fews:`
   `$ cd fews`
3. If no link to a `jre` exists, please add one as follows:
   `$ ln –s /awips/chps_share/java jre`
4. `Remove the current bin, so the test user can use the new binaries`
5. `$ rm –r bin`
6. `$ cp –dR /awips/chps_share/install/NWS201402/delft_fews_binaries/bin .`
7. If no `??rfc_oc` exists, please copy one from an existing OC into the directory
8. `$ cd ??rfc_oc`
9. `$ rm *patch.jar`
10. `$ rm –r export_config (if any)`
11. `$ rm –r Import (if any)`

12. `$ cp /awips/chps_share/install/NWS201402/delft_fews_binaries/patch_placeholder/201402_patch.jar .`
    (the file 201402_patch.jar should have a size of ~5.5 MB)
13. Update the oc_synchConfig.xml file in the OC directory to point to the upgraded MC.
14. Change the line <defaultMcId>???MC00</defaultMcId>
    to point to the upgraded MC.

Upload Required Configuration Files, including updated Synchronisation files

It is important to use the upgraded OC which is now synchronizing with the upgraded MC.

1. Change directories to the OC being used for testing, for example the fews user OC.
2. `$ cd /awips/chps_share/oc/fews` (or as appropriate for the testing user)
3. `$ ./bin/fews.sh ??rfc_oc cm`
4. Login to MC after the config manager has started and Download the Configuration by selecting the <Download> button
5. Select the rootConfigFiles node. Deactivate **all files** except the `synchChannels.xml` and `synchProfiles.xml`.
6. **NOTE**: To deactivate, expand RootConfigFiles node, highlight each and click set inactive.
7. `$ cd ??rfc_oc/export_config/Config/RootConfigFiles` (you can make this directory if it does not exist)
8. Copy the new `synchChannels.xml` and `synchProfiles.xml` to this directory:
   `$ cp /awips/chps_share/install/NWS201402/synchronisation/synch* .`
9. Compare your existing SynchProfiles.xml with the new one. There are no new settings required, so please keep and use your existing one.
10. Copy any other required Config changes to the appropriate directories in this Config directory. See the Configuration document for those changes.
11. Go back to your Config Manager and select the top node of the Configuration tree
12. Click Import and browse to the export_config folder.
    `/awips/chps_share/oc/fews/rfc_oc/export_config/Config`. Import the changes in this directory and describe them as 'root configuration updates FEWS 2014.02 release February 2015'
13. Select the root element in the tree on the left hand side and press <Validate>
14. Select <Upload> for the actual upload of the latest configuration changes.
15. Check the list of files to be uploaded and verify the ones you expect are there.
16. Wait for this process to finish and exit the Configuration Manager.

Open the Operator Client test application and conduct some testing

Open the Operator Client application and verify the following:

1. Use the menu "`Help" >> "About`" and confirm that the build number is 53736 (or higher). This proves the correct build and patch is being used.
2. Login to the Master controller and confirm that the synchronisation to the OC works fine
3. Open a web-browser and login at the Admin Interface
4. Confirm that the FSS have completed their initial synchronisation (see section 3.12, step 8)
5. Once completed, submit the run to the server and confirm that it is properly executed and returned

Re-import ratings
The server upgrade may have resulted in disappearing of the ratings. Check if the ratings are still in the system and if not, just import them again.

1. Copy the NWS rating file to the FEWS Import/ratings directory
2. In the Manual Forecast Display, run the ImportRatings workflow

3.15 Log4JConfig.xml check at OCs

The existing Log4JConfig.xml does not have to be replaced, but the content of it differs from the standard generated one (by Delft-FEWS), which writes each synch activity to the log panel. This 'standard' Log4JConfig.xml will appear automatically if the system does not detect one.
In order to have its functionality as before change the following (**bold**) part:

(typically from an LX workstation in /`awips/chps_share/oc/<user>/??rfc_oc`)
Line 42:
`<category name="nl.wldelft.fews.system.synch" additivity="`**`false`**`">`

3.16 PI-service health check

RFCs using the PI-service are requested to do a health check and to rebuild the local datastore.

1. Confirm that your PI-service uses a binary that is symbolically linked to `/awips/chps_local/fews/bin` or `/awips/chps_share/fews/bin`
2. Copy the `201402_patch.jar` into your PI-service application directory `(??rfc_pi)`
3. Confirm that you kick off a RollingBarrel workflow every day in order to defrag the localDataStore.
4. Confirm that each MC has its own PI-service setup. A pi_synchConfig.xml file can only connect to one MC.
5. Remove the existing Log4JConfig.xml such that the system can rebuild a new file. This new Log4JConfig.xml file will contain a setting that makes the system create a new log file every day.
6. Remove the localDatastore
7. Replace the existing fews_piservice.sh file with the one in `NWS201402/FewsPIService`
   Only adjustment is the line "PID_FILE=fewsshell.pid" to "PID_FILE=(*.pid)
8. To restart piservices as fews on chps3 do:
   `cd /awips/chps_local/fewspiservices`
   `./fews_piservice.sh ??rfc_pi restart`
   `ps –ef |grep fewspi` (to make sure it starts)

3.17 Roll out update to all Operator Clients

Once the tests with the Operator Client are satisfying, it can be rolled out to all OCs. This is composed of a centralized update and a clean up of local OCS.

Update of shared fews binaries

1. Login as user fews to any machine
2. `$ cd /awips/chps_share/fews`
3. `$ mv bin bin_201401`
4. `$ cp –dR /awips/chps_share/install/NWS201402/delft_fews_binaries/bin .`

Note: please do not install the current binaries under bin_XXXXX with a symlink from bin-->bin_XXXXX. This will not work.

Update user OCs

1. For each lx-machine remove the localDataStore-directories as follows. You will need to know the location of your local data stores. You can find this in the oc_global.properties file as the token localDataStorePoolDir.
2. Log on as user `fews`
3. Determine the location of your local data store by looking in the oc_global.properties
4. `$ cd <the local data store pool dir>`
5. `$ rm –rf *`
6. For each user (e.g. `oper`)
7. `$ cd /awips/chps_share/oc`
8. `$ ls –l` confirm that `bin` points to `/awips/chps_share/fews/bin`
   If this is not the case, remove the directory and make a symbolic link:
   `$ ln –s /awips/chps_share/fews/bin`
9. `$ cd oper/??rfc_oc`
   (?? should be replaced with the 2 letter RFC acronym, e.g. `ne for nerfc`)
10. `$ rm *patch.jar`
11. `$ rm –r export_config (if any)`
12. `$ rm –r Import (if any)`
13. `$ cp /awips/chps_share/install/NWS201402/delft_fews_binaries/patch_placeholder/201402_patch.jar .`
    (the file 201402_patch.jar should have a size of ~5.5 MB)
14. `$ cd /awips/chps_share/oc`
15. `$ chown –R oper:fxalpha oper`
    (setting oper:fxalpha to the appropriate user and group)
16. Repeat steps 6 - 14 for each user

Note: If the installation was correct, the OC should be able to be started normally and connect to the mastercontroller.
Note: You will need to update the log4JConfig files for all users.

3.18 Repeat Upgrade for chps4, chps5 and chps6

Seq#	Description	Ref	Purpose	Check done
Upgrade chps 4, 5 and 6 (MC01system)				
13	Preparation of Central System for updating MC01		Stopping the main services chps 4, 5 and 6, including synchronisation again	
14	Point all OCs to the Upgraded MC		Update the synchConfig.xml file	
15	Java update		If not done already, update the java/jre version to 1.7u71	
16	Update of the Mastercontroller		Update the MC01 to the latest version	
17	Update of the database		Running the database update script in order to get the latest tables, indexes and constraints	
18	Update of the Admin Interface		Update the Admin Interface to the latest version	
19	Update the Forecasting Shell Server components		Update the Forecasting Shell Server components (mcproxy, delft-fews binaries)	
20	Start Mastercontroller		Start the MC running the latest version	
21	Start MC-MC Synchronisation on MC00 and MC01		Synching forecast/import data to db00 and db01	
22	Start the Forecasting Shell Machines		Start the FSSs (mcproxies) in order to let the localDataStores being rebuild and getting the latest config and data.	
End of MC01 update				
23	Migrate to the new ConfigRevisionSets		The use of the new way of storing revisions of (historical) config files require a migration of 'old style' revisions to the 'new style'	

3.19 Start MC-MC Synchronisation (multiple MC systems only)

Now that both the mastercontrollers are updated and running, the MC-MC synchronisation processes should be resumed such that the database is updated with the latest imported and forecast data

Start MC-MC synchronisation on MC00 (multiple MC systems only)

8. Start a browser on your local machine and navigate to:
   `http://chps1-###:8080/fewsadmin_###mc00`
   (### should be replaced with the 3 letter RFC acronym, e.g. `tar`)
9. Login as `admin`
10. Navigate to `Forecast tasks >> Scheduled tasks`
11. `Resume` task MC-MC synchronisation

Confirm completion of MC-MC synchronisation

Continue with the next step once the MC-synchronisation is completed.
The completion of the task can be confirmed as follows:

12. Navigate to `Forecast tasks >> Running tasks`
    Once the task is MC-MC synchronisation task is removed from this list it should show successful in the task runs overview:
13. Navigate to `Forecast tasks >> Scheduled tasks`
14. For task MC-MC synchronisation, select link ‘task runs’ in the last column of the table.

Repeat steps 1 – 7 for MC01

3.20 Update Schemas

The assumption is that the Apache webserver has been installed with a symbolic link to the schemas directory on chps1.

1. Log on to `chps1` as user `fews`
2. `$ cd /awips/chps_local/schemas`
3. `$ rm –rf *`
4. `$ cp /awips/chps_share/install/NWS201402/delft_fews_binaries/bin/Delft_FEWS_schemas.jar ./Delft_FEWS_schemas.zip`
5. `$ unzip *.zip`
6. `$ rm *.zip`